

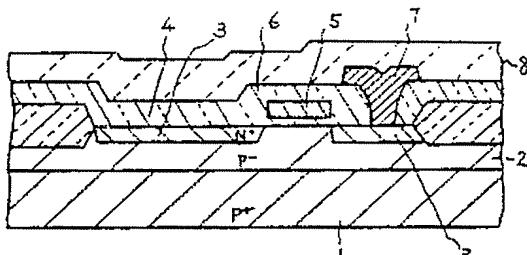
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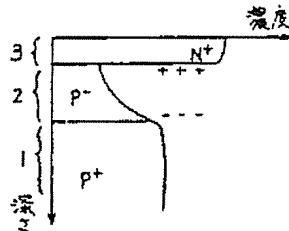
APPLICANT : HITACHI LTD;



INVENTOR : TAKEMOTO KAYAO;

INT.CL. : H01L 27/14 H04N 5/335

TITLE : SOLID-STATE IMAGE SENSOR



ABSTRACT : PURPOSE: To contrive improvement in sensitivity by a method wherein the P-type impurity layer, in which impurity connection becomes lower slowly, is formed on a high concentration P-type substrate, an N-type impurity layer is formed on said P-type impurity layer, and a P-N junction photodiode is formed.

CONSTITUTION: A low concentration P-type epitaxial layer 2 is formed on a high concentration P-type substrate 1, an N-type layer 3 is formed thereon, and a P-N junction photodiode 4 is constituted. On the photodiode 4, an MOS type FET is constituted by adjacently forming a polysilicon gate 5 which is insulated by a silicon oxide film 6 is formed adjoining, and said FET is constituted in such a manner that the electric charge generated by the diode 4 will be outputted through an output wire 7 by controlling with the output signal of the horizontal scanning part to be supplied to the gate 5. The distribution of impurity concentration of the layer 2 is formed in such a manner that the concentration will be lowered gradually toward the surface side from the deep part of the substrate.

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